

WHAT IS CLAIMED IS:

CLAIMS

1. A wireless device in a wireless communication system, comprising:
 - a data processor operative to process received data blocks for a plurality of data channels and to provide a status of each received data block, wherein the plurality of data channels are used for a data transmission and are power controlled together; and
 - a controller operative to
 - determine whether each of the plurality of data channels is dormant or not dormant,
 - adjust a final signal quality (SIR) target for the plurality of data channels based on status of received data blocks for data channels that are not dormant, and
 - use the final SIR target for power control of the data transmission sent on the plurality of data channels.
2. The wireless device of claim 1, wherein the controller is further operative to maintain an inactivity timer and a dormant flag for each of the plurality of data channels, the inactivity timer indicating an amount of elapsed time since activity was last detected on the data channel, and the dormant flag indicating whether the data channel is dormant or not dormant.
3. The wireless device of claim 1, wherein the controller is operative to, for each of the plurality of data channels,
 - determine an amount of time elapsed since activity was last detected on the data channel,
 - declare the data channel to be dormant if the amount of elapsed time since last activity is greater than or equal to a predetermined time threshold, and
 - declare the data channel to be not dormant if the amount of elapsed time since last activity is less than the predetermined time threshold.
4. The wireless device of claim 3, wherein the controller is operative to detect for activity on each of the plurality of data channels based on an error detection code applied to each data block sent on the data channel.

5. The wireless device of claim 3, wherein the controller is operative to detect for activity on each of the plurality of data channels based on received signaling information indicating whether or not data blocks are sent on the data channel.

6. The wireless device of claim 3, wherein the controller is operative to detect for activity on each of the plurality of data channels based on energy of received data blocks for the data channel.

7. The wireless device of claim 1, wherein the controller is operative to adjust an SIR target for each data channel that is not dormant based on status of received data blocks for the data channel, wherein one SIR target is maintained for each data channel that is not dormant, and
derive the final SIR target based on SIR targets for the data channels that are not dormant.

8. The wireless device of claim 7, wherein the controller is operative to set the final SIR target to a highest SIR target among the SIR targets for the data channels that are not dormant.

9. The wireless device of claim 7, wherein to adjust the SIR target for each data channel that is not dormant, the controller is operative to increase the SIR target for the data channel by an up step size for each erased block received on the data channel and to decrease the SIR target for the data channel by a down step size for each good block received on the data channel, a good block being a received data block that passes an error detection code, and an erased block being a received data block that is deemed to have been transmitted but fails the error detection code.

10. The wireless device of claim 7, wherein to adjust the SIR target for each data channel that is not dormant, the controller is operative to increase the SIR target for the data channel by an up step size for each time interval in which at least one erased block is received on the data channel and to decrease the SIR target for the data channel by a down step size for each time interval in which at least one good block and no

erased blocks are received on the data channel, a good block being a received data block that passes an error detection code, and an erased block being a received data block that is deemed to have been transmitted but fails the error detection code.

11. The wireless device of claim 7, wherein the controller is further operative to, if a data channel is determined to have become dormant in a current update interval, set the SIR target for each data channel that is not dormant in the current update interval to the final SIR target for the current update interval.

12. The wireless device of claim 1, wherein to adjust the final SIR target for the plurality of data channels, the controller is operative to, for each update interval,

increase the final SIR target if at least one erased block is received in the update interval, an erased block being a received data block that is deemed to have been transmitted but decoded in error, and

decrease the final SIR target if good blocks and no erased blocks are received in the update interval, a good block being a received data block that is decoded correctly.

13. The wireless device of claim 12, wherein the controller is further operative to select a down step size, used to decrease the final SIR target, based on the status of the received data blocks for the data channels that are not dormant.

14. The wireless device of claim 1, wherein the controller is operative to use a first up step size if an erased block is received on a data channel within a predetermined period after the data channel has transitioned from dormant to not dormant and to use a second up step size if an erased block is received on the data channel at other time, an erased block being a received data block that is deemed to have been transmitted but decoded in error, and wherein the first up step size is larger than the second up step size.

15. The wireless device of claim 14, wherein the predetermined period is defined by a predetermined number of units of time or a predetermined number of good

blocks received on the data channel, a good block being a received data block that is decoded correctly.

16. The wireless device of claim 1, wherein the controller is further operative to, if a data channel is determined to have become dormant in a current update interval, save a last SIR target value for the data channel, the last SIR target value being an SIR target value usable for the data channel in the current update interval.

17. The wireless device of claim 1, wherein the controller is further operative to, if activity is detected on a data channel that was dormant,
determine an initial SIR target value for the data channel, and
adjust the final SIR target further based on the initial SIR target value for the data channel.

18. The wireless device of claim 17, wherein the initial SIR target value is an SIR target value stored for the data channel at the time the data channel was determined to be dormant.

19. The wireless device of claim 17, wherein the initial SIR target value is a higher of the final SIR target for a current update interval and an SIR target value stored for the data channel at the time the data channel was determined to be dormant.

20. The wireless device of claim 1, wherein the controller is further operative to derive transmit power control (TPC) commands based on the final SIR target and a received SIR for the data transmission, and wherein the TPC commands are used to adjust transmit power for the data transmission sent on the plurality of data channels.

21. The wireless device of claim 1, wherein the wireless communication system is a Code Division Multiple Access (CDMA) system, and wherein the plurality of data channels are transport channels.

22. An apparatus in a wireless communication system, comprising:

means for determining whether each of a plurality of data channels is dormant or not dormant, wherein the plurality of data channels are used for a data transmission and are power controlled together;

means for adjusting a final signal quality (SIR) target for the plurality of data channels based on status of received data blocks for data channels that are not dormant; and

means for using the final SIR target for power control of the data transmission sent on the plurality of data channels.

23. The apparatus of claim 22, wherein the means for determining whether each of the plurality of data channels is dormant or not dormant comprises

means for determining an amount of time elapsed since activity was last detected on the data channel,

means for declaring the data channel to be dormant if the amount of elapsed time since last activity on the data channel is greater than or equal to a predetermined time threshold, and

means for declaring the data channel to be not dormant if the amount of elapsed time since last activity on the data channel is less than the predetermined time threshold.

24. The apparatus of claim 22, wherein the means for determining whether each of the plurality of data channels is dormant or not dormant comprises

means for detecting for activity on each of the plurality of data channels based on an error detection code, received signaling information, received data block energy, or a combination thereof.

25. The apparatus of claim 22, further comprising:

means for adjusting an SIR target for each data channel that is not dormant based on status of received data blocks for the data channel, wherein one SIR target is maintained for each data channel that is not dormant; and

means for deriving the final SIR target based on SIR targets for the data channels that are not dormant.

26. A processor readable media for storing instructions operable in a wireless device to:

determine whether each of a plurality of data channels is dormant or not dormant, wherein the plurality of data channels are used for a data transmission and are power controlled together;

adjust a final signal quality (SIR) target for the plurality of data channels based on status of received data blocks for data channels that are not dormant; and

use the final SIR target for power control of the data transmission sent on the plurality of data channels.

27. A method of performing power control for a data transmission in a wireless communication system, comprising:

determining whether each of a plurality of data channels is dormant or not dormant, wherein the plurality of data channels are used for the data transmission and are power controlled together;

adjusting a final signal quality (SIR) target for the plurality of data channels based on status of received data blocks for data channels that are not dormant; and

using the final SIR target for power control of the data transmission sent on the plurality of data channels.

28. The method of claim 27, wherein the determining whether each of a plurality of data channels is dormant or not dormant comprises, for each data channel,

determining an amount of time elapsed since activity was last detected on the data channel,

declaring the data channel to be dormant if the amount of elapsed time since last activity is greater than or equal to a predetermined time threshold, and

declaring the data channel to be not dormant if the amount of elapsed time since last activity is less than the predetermined time threshold.

29. The method of claim 27, further comprising:

adjusting an SIR target for each data channel that is not dormant based on status of received data blocks for the data channel, wherein one SIR target is maintained for each data channel that is not dormant; and

deriving the final SIR target based on SIR targets for the data channels that are not dormant.